

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Previously presented): A method for controlling a magnetic actuator having a coil and an armature within a power switching device, the actuator being connected to a power line in a high voltage electrical distribution system, the method comprising:

inputting a power signal;

applying a first series of modulated current pulses having a first magnitude through the coil of the magnetic actuator connected to the power line in the high voltage electrical distribution system;

modifying the first magnitude of the first series of modulated current pulses; and

applying a second series of modulated current pulses having a second magnitude through the coil of the magnetic actuator connected to the power line in the high voltage electrical distribution system in a first direction such that the actuator moves from a first position to a second position.

2. (Original): The method of claim 1 further comprising:

applying a series of modulated current pulses through the coil of the magnetic actuator in a second direction such that the actuator moves from the second position to a third position.

3. (Original): The method of claim 2 wherein the third position is the first position.

4. (Original): The method of claim 1 further comprising:

measuring a current value in the coil while pulsing the coil; and

comparing the current level with a threshold value.

5. (Original): The method of claim 4 further comprising:

determining, based on the comparison, whether to continue applying a series of modulated current pulses through the coil of the magnetic actuator in a first direction such that the actuator moves from a first position to a second position.

6. (Canceled)

7. (Currently amended): The method of claim 1 wherein tuning the current pulse comprises changing the amplitude and duration of at least one of the modulated current pulses.

8. (Previously presented): A power switching control device for controlling a magnetic actuator within a power switching device connectable to a power line in a high voltage electrical distribution system, the control device comprising:

a power supply;

at least one actuator drive circuit adapted to provide a series of modulated current pulses to the magnetic actuator, the actuator being connectable to the power line in the high voltage electrical distribution system within the power switching device; and

a microprocessor for monitoring the series of modulated current pulses to determine whether to modify the magnitude of the modulated current pulses.

9. (Canceled)

10. (Currently amended): The power switching control device of claim 8 wherein the control device has a low setting, a medium setting and a high setting for the tunable current pulses.

11. (Original): The power switching control device of claim 8 wherein the power switching control device is a recloser controller and the power switching control device is a recloser.

12. (Original): The power switching control device of claim 8 wherein the power supply is a direct current power supply.

13. (Original): The power switching control device of claim 8 wherein the power supply is an alternating current power supply.

14. (Original): The power switching control device of claim 8 wherein the power switching control device comprises three actuator control circuits.

15. (Original): The power switching control device of claim 8 wherein the power supply is programmable between 150 and 250 VDC.

16. (Original): The power switching control device of claim 8 further comprising:
a controller housing; and
an energy storage capacitor contained within the controller housing for storing the energy to be delivered to the magnetic actuator.

17. - 23. (Canceled)

24. (Currently amended): A power switching device system comprising:

a power switching device having a magnetic actuator connectable to a power line in a high voltage electrical distribution system including a coil and an armature;

a power switching device controller adapted to apply a voltage across the coil for a predetermined interval of time, measure a current value in the coil during a portion of the predetermined interval of time, determine an impedance value for the coil based on the current value, compare the impedance value for the coil to a threshold impedance value for the coil and determine, based on the comparison, a characteristic of the magnetic actuator;
[[and]]

a microprocessor for monitoring [the] a series of modulated current pulses applied to the magnetic actuator to determine whether to modify the magnitude of the modulated current pulses[.]; and

at least one actuator drive circuit adapted to provide a series of modulated current pulses to the magnetic actuator.

25. (Original): The power switching device system of claim 24, wherein the characteristic of the magnetic actuator is the position of the armature in the magnetic actuator.

26. (Original): The power switching device system of claim 24, wherein the characteristic of the magnetic actuator is the condition of the coil.

27. (Original): The power switching device system of claim 24, wherein the power switching device controller comprises:

memory for storing data;

a microprocessor; and

a voltage regulator electrically connected to the microprocessor, the voltage regulator adapted to switch between a linear mode and a switching mode.

28. - 38. (Canceled)